

Application No. 09/774,284
Amendment Dated May 23, 2005
Reply to Office Action of 3/29/2005

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Claims 1 – 103 (cancelled)

Claim 104 (currently amended): A method of purifying gram quantities of plasmid DNA from a bacterial cell solution, the method comprising the steps of:

lysing bacterial cells containing plasmid DNA with a lysis solution to form a lysate solution;

removing contaminants from the lysate solution by precipitating the contaminants from a supernatant of the lysate solution; and

recovering plasmid DNA from the supernatant using column chromatography over a tentacle anion exchange resin.

Claims 105 - 108 (cancelled)

Claim 109 (currently amended): The method in claim 104 wherein the tentacle anion exchange resin is a trimethylaminoethyl (TMAE) TMAE tentacle resin.

Claim 110 (previously presented): The method in claim 109 wherein the use of the TMAE tentacle anion exchange resin comprises the step of eluting the plasmid DNA via a step gradient.

Claim 111 (previously presented): The method in claim 104 wherein the tentacle anion exchange resin has a particle size of 20-40 microns.

Claim 112 (previously presented): The method in claim 109 wherein the TMAE tentacle anion exchange resin comprises a methacrylate based copolymer having a tentacle linked TMAE functional group.

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Claim 113 (currently amended): The method in claim 109 wherein the plasmid DNA is eluted from the TMAE tentacle anion exchange resin with a salt solution comprising about 1.9 M ammonium sulfate and or at least 0.7M NaCl.

Claim 114 (previously presented): The method in claim 104 wherein the step of recovering plasmid DNA from the supernatant comprises the steps of:

passing the supernatant through a tentacle anion exchange resin ; wherein the plasmid DNA binds to the resin;

eluting the plasmid DNA in a first eluate from the resin;

adjusting a salt concentration of the first eluate to contain at least 2M ammonium sulfate;

passing the first eluate through a hydrophobic interaction resin, wherein supercoiled plasmid DNA binds to the hydrophobic interaction resin; and

eluting the supercoiled plasmid in a second eluate from the hydrophobic interaction resin via an eluent having less than 2M ammonium sulfate.

Claim 115 (previously presented): A method for removing contaminants from a plasmid DNA solution comprising:

- a) contacting a solution comprising plasmid DNA with a tentacle anion exchange resin, the solution having a conductivity at which the plasmid DNA is bound to the resin;
- b) washing the resin to elute the contaminates; and
- c) eluting the plasmid DNA with a step or continuous gradient of increasing conductivity.

Claim 116 (previously presented): The method of claim 115, wherein the tentacle anion exchange chromatography resin comprises tentacles having about 15 to about 50 units in length.

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Claim 117 (previously presented): The method of claim 115, wherein the tentacle anion exchange chromatography resin comprises tentacles having an average of about 18 charged groups covalently bound to each tentacle.

Claim 118 (previously presented): The method of claim 115, wherein the tentacle anion exchange resin is a strong anionic changer resin.

Claim 119 (previously presented): The method of claim 115, wherein the tentacle anion exchange resin has TMAE functional groups.

Claim 120 (previously presented): The method of claim 115, wherein the plasmid DNA solution is a clarified lysate obtained after alkaline lysis of bacterial cells comprising the plasmid DNA and removal of precipitated proteins, chromosomal DNA and cell debris.

Claim 121 (previously presented): The method of claim 115, further comprising a step of hydrophobic interaction chromatography (HIC).